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ABSTRACT

This study explored the efficacy of semantic behavior therapy in the management of chronic osteoarthritis pain in elderly patients as well as the relationships among pain, physical health, personality, and social characteristics in this population. The sample consisted of 8 elderly persons who had osteoarthritis of the knee, and 11 healthy elderly persons who comprised the control group. Experimental pain (sensory thresholds, pain thresholds, and pain tolerance levels) was assessed. All subjects were administered a variety of assessment instruments before and after the arthritis subjects received four sessions of a semantic behavior therapy program for pain control. The results revealed that the experimental subjects reported significant reductions in knee pain, and in the extent to which pain interfered with their lives, following therapy. The experimental group also showed significant reductions in psychological symptoms and improvement in self-rated health. No significant differences were found for electrical stimulation measures of sensory threshold, pain threshold, or pain tolerance as a function of treatment. These findings suggest that the therapy operated primarily on psychological processes underlying the experience of pain independent of clients' sensory pain threshold levels. Significant correlations were found for psychological adjustment and physical health. Self-control and instrumental coping appeared to be key variables associated with pain perception, physical health, and psychological adjustment. (NB)

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Semantic Behavior Therapy and Psychosocial Variables in the Treatment of Chronic Pain in the Elderly

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Purpose

This study explored the efficacy of semantic behavior therapy (Hekmat, in press) in the management of chronic oesteoarthritis pain in elderly patients as well as the relationships among pain, physical health, personality and social characteristics in this population.

The field of behavioral medicine has produced many advances in the control of chronic pain (Engstrom, 1981; Lorenz, 1981; Turk, Meichenbaum & Genest, 1983). However, few studies using behavioral techniques have been conducted with elderly people in chronic pain, even though the elderly suffer the most from chronic diseases (Hickey, 1980; Lewinson & Teri, 1983). Osteoarthritis was the selected disease first, as a control procedure since many pain therapy analyses do not focus on a specific disease, and second because osteoarthritis is the most common chronic disease among the elderly (Kart, Metress & Metress, 1978; Maddox, 1978).

Semantic behavior therapy was selected as the intervention technique because of its emphasis on self control and mastery. Several studies in the chronic pain literature suggest that a relationship exists among self-mastery of stressful events, emotional states, and experiences of pain. Gottlieb, Strite, Koller, Madorsky,

Hackersmith, Kleeman and Wagner (1977), Keefe (1982) and Keefe and Bradley (1984) found that interventions which emphasize the development of the ability to gain a sense of self-mastery over pain are effective in reducing the discomfort associated with chronic pain. Further, the work of Lorig and her colleagues (Gravel, 1985; Lorig, Laurin & Holman, 1984; Lorig, Lubeck, Kraines, Seleznick & Holman, in press) suggests that increasing self-efficacy effectively reduces chronic arthritic pain.

Finally, the associations among pain and psychosocial variables were examined because of the wide support in the literature for the importance of health status, stress, as well as adjustment and overall well being as important mediators of pain (Ilfeld, 1980; Khatami & Rush, 1982; Melzack, 1980a, 1980b.; Roberts & Reinhart, 1980; Weisenberg, 1983).

Procedure

The sample consisted of 19 elderly people. Eight individuals ($\overline{X}$ age, 69.50, SD = 6.57) had osteoarthritis of the knee, but were otherwise healthy and had no debilitating cognitive or psychological impairments. Eleven healthy elderly persons ($\overline{X}$ age, 70.82, SD = 3.19) comprised the control group. Mean Duncan scale ratings for occupation were 57.00 (SD = 25.25) for the experimental group and 52.81

(SD = 15.88) for the control group. Average income for all subjects ranged from $12,600 - $14,199. The experimental group had a mean Philadelphia Geriatric Center Multi-level Assessment of 8.82 (SD = 1.66) for income. The control group's mean rating was 8.63 (SD = 2.56). Average years in school was 12.25 (SD = 2.55) for the experimental subjects and 12.27 (SD = 3.26) for the controls.

Both the experimental and control subjects were measured with a variety of assessments. Experimental pain (sensory thresholds, pain thresholds, and pain tolerance levels) was assessed on a Grass S44 stimulator by EEG technicians in a clinic neurology department. Stimuli were delivered at 4.9 pps for a duration of 70 milliseconds. Amp range of the stimuli was 0 to 19. Subjects received three trials for faradic stimulation. On the first trial they were asked to indicate when they simply felt something. That amp level then was recorded as sensory threshold. On the next trial they were asked to indicate when they felt pain. That response was recorded as pain threshold. On the third trial subjects were asked to indicate that they would like the stimulation to stop. This last amp level was recorded as pain tolerance.

The Wisconsin Brief Pain Questionnaire (BPI) (Daut, Cleeland, & Glanery, 1983) and self monitoring scales were

used to record the subjective evaluation of pain. The Philadelphia Geriatric Center Multi-level Assessment Instrument (MAI) (Lawton, Moss, Fulcomer & Kleban, 1982), the Rosenbaum Self Control Schedule (SCS) (Rosenbaum, 1980), the Eysenck Personality Questionnaire (EPQ) (Eysenck, 1975) and the Elderly Research Center Coping Scale (ECRC) (Mangen & Peterson, 1982) were used to assess personality and social factors. In addition the eight osteoarthritic patients were administered the Stanford Arthritis Scale (Liang, Schurman & Fries, 1978).

All measures were administered before and after a semantic behavior therapy program for pain control designed for eight arthritic knee patients. The experimental group received four sessions of semantic behavioral therapy (Hekmat, in press). They were taught deep muscle relaxation followed by semantic relaxation. In the semantic relaxation, subjects were instructed to use pleasant evaluative self instructions as well as visually relaxing images as a method of coping with pain. Therapeutic emphasis was placed on the client's self control and the directive and reinforcing functions of the positive emotive responses. The eleven control subjects were not exposed to semantic behavior therapy protocols.

Two (treatments) x two (trials) mixed factorial analysis of variance were performed on the electrical stimulation pain measures, self reports of pain and the psychosocial scales administered to both the experimental and control groups. The Stanford Arthritis Scales were analyzed with a dependent t test for the eight experimental subjects. In addition inter-correlations among pretreatment scores were performed for all subjects in order to determine interrelationships among the pain, health, personality and social variables.

Results

The Experimental clients reported significant reductions in knee pain on the Stanford Arthritis Scale ($t(1,7) = 24.65$, $p<.002$). Analyses of the BPI measures of self-reported pain "now" and "on the average" also revealed significant changes for this group. Further, the BPI measure which indicated the extent to which pain interferes with general activity, mood, evaluating ability, work, relations with other people, sleep and enjoyment of life revealed that the experimental subjects showed significant reductions in the extent to which pain interfered with their lives. Table 1 contains the BPI scores and analyses.

Analysis of variance of the MAI indicated that the experimental group also showed significant reductions in

psychological symptoms and improvement in self-rated health. See Table 2.

No significant differences were found for electrical stimulation measures of sensory threshold, pain threshold or pain tolerance as a function of treatment. Sensory threshold, pain threshold and pain tolerance measures were interrelated as were self reported pain measures. Negative correlations between physical pain threshold and self reports of pain were detected. Only one of these, the adjective ratings for "unbearable" on the BPI and pain threshold and pain tolerance (r= -.70, p<.001) (r = -.60, p<.01) reached significance.

Significant correlations were found for psychological adjustment and physical health (r = .77, p<.001, especially self-ratings of health (r = .69, p<.001) on the MAI. The correlations among the MAI subscales of social support, time use and independent living scales and psychological adjustment were not significant.

Self control as measured by the SCS correlated significantly the MAI subscales of physical health (r = .55, p<.05), psychological adjustment (r = .65, p<.01), and morale (r = .70, p<.001).

Physical health as measured by the MAI correlated significantly with neuroticism (r = -.64, p<.01) on the EPQ,

but not psychoticism or extroversion. Neuroticism also showed a negative relationship to morale (r = -.60, p<.01), and psychological adjustment (r= -.71, p<.001) on the MAI as well as to self control scores on the SCS (r = -.61, p<.01). In addition neuroticism was significantly positively correlated with affective coping strategies on the ECRA (r = .45, p<.05).

Finally instrumental coping as measured by the ECRC related negatively to self reports of pain (r = -.46, p<.05).

Conclusion

The Semantic Behavior Therapy significantly improved the experimental patients' perception of natural arthritic pain experiences and pain behavior. Physical measures of sensory thresholds, pain thresholds and pain tolerance as measured by faradic conductivity tests were not affected by the therapeutic intervention. These results suggest that the semantic behavior therapy operated primarily on psychological processes underlying the experience of pain independent of clients' sensory pain threshold levels. Further, elderly persons' physical health, particularly their own perception of their health, is a key factor in psychological adjustment in aging. Physical health appears to be a factor, which is more important than social support

and constructive activity in those aging individuals who are basically physically well and functioning. Finally, self control and instrumental coping appear to be key variables associated with pain perception, physical health and psychological adjustment.

References

Daut, R.L., Cleeland, C.S., & Flanery, R.C. (1983). Development of the Wisconsin Brief Pain Questionnaire to assess cancer and other diseases. Pain, 17, 197-210.

Engstrom, G.E. (1981). Cognitive behavioral therapy methods in chronic pain treatment. Pain. (Supplement 1).

Eysenck, H.J. (1975). Eysenck Personality Questionnaire. San Diego, CA: Educational and Industrial Testing.

Gottlieb, H., Strite, L.C., Koller, R., Madorsky, A., Hockersmith, V., Kleeman, M., & Wagner, J. (1977). Comprehensive rehabilitation of patients having chronic low back pain. Archives of Physical Medicine and Rehabilitation, 58, 101-108.

Gravelle, K. (1985). Advances, Institute for the Advancement of Health, 2 (3), 8-13.

Hekmat, H. (in press). Semantic behavior therapy of anxiety disorders: An integrative approach. In Evans, I.M. (Ed.) Paradigmatic behavior therapy: Critical perspectives on applied social behaviorism. NY: Springer.

Hickey, T. (1980). Health and aging. Monterey, CA: Brooks Cole.

Ilfeld, F. (1980). Age stressors and psychosomatic disorders. Psychosomatics, 21, 56-64.

Kart, C.S., Metress, E.S., & Metress, J.F. (1978). Aging and health: Biologic and social perspectives. Menlow Park, CA: Addison-Wesley.

Keefe, F.J. (1982). Behavioral assessment and treatment of chronic pain: Current status and future directions. Journal of Consulting and Clinical Psychology, 50, (6), 896-911.

Keefe, F.J., & Bradley, L.A. (1984). Behavioral and psychological approaches to the assessment and treatment of chronic pain. General Hospital Psychiatry, 6 (1), 49-54.

Khatomi, M., & Rush, A.J. (1982). A one year follow-up of the multimodel treatment for chronic pain. Pain, 14 (1), 42-52.

Lawton, M.P., Moss, M., Fulcomer, M., & Kleban, M.H. (1982). A research and service oriented multilevel assessment instrument. Journal of Gerontology, 37,(1), 91-99.

Lewisohn, P.M., & Teri, L. (Ed.). (1983). Clinical geropsychology. NY: Pergamon.

Liang, M., Schurman, D.C., & Fries, J. (1978). A patient administered questionnaire for arthritis assessment. Clinical orthopedics, 31, 123-129.

Lorenz, K.Y. (Ed.). (1981). New approaches to the treatment of chronic pain. (National Institute on Drug Abuse Research Monograph, 36). Washington, DC: U.S. Government Printing Office.

Lorig, K., Laurin, J., & Holman, H.R. (1984). Arthritis self-management: A study of the effectiveness of patient education for the elderly. The Gerontologist, 24, (5), 455-457.

Lorig, K., Lubeck, D., Kraines, R., Seleznick, M., & Holman, H., (in press). Outcomes of self-help education with arthritis. Arthritis and Rheumatism.

Maddox, G.L. (1978). Assessment and evaluation strategies in aging: People population and programs. Durham, NC: Duke University Center for the Study of Aging and Human Development.

Mangen, D.J., & Petersen, W.A. (Eds.). (1982). Clinical and social psychology: Research instruments in social gerontology (Vol. 1). Minneapolis: University of Minnesota Press.

Melzack, R. (1980a). Pain mechanisms and stress. Stress, 1, 18-23.

Melzack, R. (1980b). Psychological aspects of pain. Pain, 9, 143-154.

Roberts, A.H., & Reinhardt, L. (1980). The behavioral management of chronic pain: Long term follow up with comparison groups. Pain, 8 (2), 151-162.

Rosenbaum, M.A. (1980). Schedule for assessing self-control behaviors: Preliminary findings. Behavior Therapy, 11, 109-121.

Turk, D.C., Melchenbaum, D. & Genest, M. (1983). Pain and behavioral medicine. NY: The Guilford Press.

Weisenberg, M. (1983). Behavior strategies in pain and its control. In M. Rosenbaum & Franks (Eds.), Perspectives on behavior therapy in the eighties. (pp. 328-341). NY: Academic press.

Table 1

Pre and Post Test Scores on the Wisconsin Brief Pain Inventory for the Experimental and Control Groups

		Experimental		Control	
		$\bar{X}$	SD	$\bar{X}$	SD
Pain Now [a]	Pre	3.75	2.12	.82	1.54
	Post	1.50	.93	.73	1.19
Pain on the Average [b]	Pre	5.13	1.36	2.09	1.51
	Post	4.00	1.07	1.91	1.07
Pain Interference [c]	Pre	29.50	12.95	7.09	6.64
	Post	19.63	12.47	9.00	8.60

[a] Treatments F (1,17) = 12.20, $p<.003$
Trials F (1,17) = 6.91, $p<.02$
Interaction F (1,17) = 5.88, $p<.03$

[b] Treatments F (1,17) = 15.56, $p<.001$
Trials F (1,17) = 5.48, $p<.03$
Interaction f (1,17) = 2.86, $p<.10$

[c] Treatments F (1,17) 13.54, $p<.002$
Trials F (1,17) 9.29 $p<.007$
Interaction F (1,17) 20.33, $p<.001$

Table 2

Pre and Post Scores on MAI Scores for Self-Rated Health and Psychological Symptoms

		Experimental		Control	
		$\bar{X}$	SD	$\bar{X}$	SD
Self-Rated Health[a]	Pre	7.75	2.44	10.36	.92
	Post	9.25	1.67	10.36	1.12
Psychological Symptoms[b]	Pre	2.75	2.05	4.64	.50
	Post	3.25	2.05	4.27	.91

[a] Treatments F (1,17) = 7.59, $p<.02$
Trials F (1,17) = 8.59, $p<.008$
Interaction F (1,17) = 8.59 $p<.008$

[b] Treatments F (1,17) = 13.50, $p<.002$
Trials F (1,17) = 9.29, $p<.007$
Interaction F (1,17) = 20.33, $p<.001$